



SWM in Fukuoka City

for Sustainable Urban Development

Fukuoka City

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1. Introduction of Fukuoka City





Introduction of Fukuoka City



Percentage of Foreign Residents in Fukuoka City (2021)

Sources: FUKUOKA GROWTH 2022 (Fukuoka Asian Urban Research Center)

Tends in in waste disposal volume in Fukuoka City

Solid Waste Management in Fukuoka City

Nighttime door-to-door garbage collection

Waste to Energy

Fukuoka Method Landfill Sites

2. Garbage Collection

Successful Waste Reduction

Waste Disposal and Recycle

Garbage is collected through four separate means.

Efficient Waste Management System realizes Reuse, Recycle & Energy Generation.

Disposal of Combustible Garbage

Efficient Waste Management System realizes Reuse, Recycle & Energy Generation.

Disposal of Non-Combustible Garbage

Efficient Waste Management System realizes Reuse, Recycle & Energy Generation

Efficient Waste Management System realizes Reuse, Recycle & Energy Generation.

Waste Disposal Flowchart

Efficient Waste Management System realizes Reuse, Recycle & Energy Generation.

Garbage type	Collection days *	When to put out garbage	Where to put out garbage		
Burnable garbage	Twice a week	Put out garbage between sunset and midnight.	 Detached houses: in front of the property Apartment complexes: in the building's designated 		
Non-burnable garbage	Once a month	and the second	spot If the road in front of your residence is too narrow for garbage trucks, use the spot specified by your Residents		
Glass bottles and PET bottles	Once a month	Sunset Midnight	Association.		
Oversized Apply in advance		Until 8:30 a.m. on the day you have you booked your collection.	You must specify the disposal loca- tion at the time of application if the items are too large for the garbage collection area.		

P	many municipalities	Fukuoka City		
Time to put out garbage	Early morning (until 8:30)+	From sunset to midnight (0 : 00) +		
Time to collect garbage	Early morning till eveninge	From midnight +		
Place to put out garbage	Detached houses: 1 garbage collection spot for each about 30 households ² ⁴ Apartment complexes: in the building's designated spot ²	Detached houses: In front of each house Apartment complexes: in the building's designated spot		

History of garbage collection

Night-time collection

Improved collection work efficiency
 Crime prevention and disaster Prevention
 Reduction of crow damage

✓ Noise during garbage collection

What do you think of the way garbage is collected at night?

3R-station

Collection of recyclables by citizens

← Recyclables …paper, Pet bottles, aluminum cans etc.

COLLECTION point

Ward offices,
 Community center,
 Public Apartment,
 Park, etc.

3• Intermediate treatment

PLANT & LANDFILL in Fukuoka City

Data for 4 Plants, JFY 2021

		West Plant	Water-Front Plant	East Plant	South Plant	Total
Total amount of waste accepted (ton)		113,306	179,078	151,045	108,420	551,849
Total Generation (MW h)		41,692	101,186	90,127	68,445	301,451
Break down	Used (MWh)	25,292	34,892	33,779	20,140	114,103
	Sold (MW h)	16,400	66,294	56,348	48,305	187,348
Revenue(USD)		1.4million	4.9million	6.4million	6.2million	18.9million

*1MWh=1,000kWh

*1USD=110JPY (2021)

4. Overview of Fukuoka Method

International Contribution and Cooperation through Fukuoka Method

Promoting international contribution through cooperating with UN-Habitat, Ministry of the Environment, JICA, Fukuoka University.

Development of the Fukuoka Method (Semi-aerobic Landfill Structure)

Landfill sites around 1970 in Fukuoka City

Japan, like many developing countries such as African countries today, used anaerobic landfills and open dumping until the 1960-70s.

International Contribution and Cooperation through Fukuoka Method

Jointly developed by Fukuoka University and Fukuoka City, successfully commercialized

A waste landfill structure that leads to the reduction of methane generation

Reduces Greenhouse Gases

compared to anaerobic landfill structure

The Completed Landfill Site by Using Fukuoka Method in 1999

It has been used as many purposes. (Photo was taken in 2015)

The Completed Landfill Site by Using Fukuoka Method in 1999

After Adopting the Fukuoka Method (1999)

Progress in Nakata landfill, Fukuoka city

Fukuoka Method Project

① Design and Construction

② Operation and Maintenance (O & M)

Technical instruction on receiving waste and landfill work

Monitoring

③ Closure/reuse of landfill site

Project with UN-Habitat in Myanmar

Fukuoka method was introduced in Myanmar to improve landfill

It was funded by Japanese government in collaboration with UN-HABITAT

Fire conditions, April 2018

August 2019

January 2022

March 2021

September 2020

JICA long-term expert in Samoa

Before improvement (2001)

Left) Raw leachate Right) Raw leachate after improvement (2005) During project (2003)

Other JICA program/study

JICA Partnership Program @Vietnam

During improvement (2011)

After improvement (2012)

Short-term dispatch for survey

Islamabad, Pakistan

Other projects collaborated with UN-Habitat

Project Sign on site

Demonstration site

PRC

Survey of proposed construction site (2001)

Gas monitoring(2004)

Slope forming before sheeting (2002)

Completed landfill site(2003)

During operation(2003)

Training in Fukuoka

Practical & effective training on Fukuoka Method & collection etc.

> Partnered with Fukuoka Univ. & city's affiliated organ.

5. Fukuoka Method Global Network

Challenges and Supports to Expand Fukuoka Method

In order to promote proper Fukuoka Method

Proper understanding of the basic principles of "Fukuoka Method" and human resource development are important.

Q. What kinds of problems does your city have with operating and managing the landfill?

Q. What kinds of support would be necessary to introduce the Fukuoka Method in your city?

Fukuoka Method Global Network(FMGN)

The Fukuoka Method Global Network (FMGN) was established as it is important to properly understand the basic principles of the Fukuoka Method and to develop the human resources to use it.

Sharing information

on Fukuoka Method through seminars and SNS

Training

to ensure the correct understanding of Fukuoka Method

Online consulting for engineers in Japan and abroad

Utilizing manuals and databases of the Fukuoka Method and past cases

FMGN Fukuoka Method Global Network

The Session Commemorating the establishment of FMGN

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Training for domestic engineers

Sharing the information of FMGN

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